

## WHAT IS CLAIMED IS:

1. A composition formed in a fluorescence quench-based homogenous assay for enzymatic activity comprising a paramagnetic metal ion and a substrate for an enzyme or an enzymatic endproduct resulting from reaction of the enzyme with a substrate, the substrate or endproduct containing a fluorophore label and containing a target group to which the paramagnetic metal ion is bound to form a complex of the target and ion, said complex being in proximity to the fluorophore to cause the specific quenching of the fluorescence of the label when the complex forms.
2. The composition of claim 1 wherein the target group is a phosphoryl group.
3. The composition of claim 1 wherein the target group is an imidazole group.
4. The composition of claim 1 wherein the paramagnetic metal ion is Fe (III).
5. The composition of claim 1 wherein the paramagnetic metal ion is Ni (II).
6. The composition of claim 2 wherein the paramagnetic metal ion is Fe (III).
7. The composition of claim 3 wherein the paramagnetic metal ion is Ni (II).
8. The composition of claim 1 wherein the substrate or endproduct contains a single fluorophore label which is the only dye entity attached thereto.
9. The composition of claim 6 wherein the substrate or endproduct contains a single fluorophore label which is the only dye entity attached thereto.
10. The composition of claim 7 wherein the substrate or endproduct contains a single fluorophore label which is the only dye entity attached thereto.
11. The composition of claim 1 wherein the paramagnetic metal ion, in addition to being bound to the target group, is coordinated with a chelator.

12. The composition of claim 6 wherein the paramagnetic metal ion, in addition to being bound to be the target group, is coordinated with a chelator.

13. The composition of claim 7 wherein the paramagnetic metal ion, in addition to being bound to be the target group, is coordinated with a chelator.

14. A method for assaying the activity of an enzyme by contacting the enzyme with a population of fluorophore labeled substrate in an aqueous enzymatic reaction mixture, allowing the enzymatic reaction to proceed, contacting this reaction mixture with a paramagnetic metal ion to form a complex of the paramagnetic metal ion with a target group, said complex when in proximity to the fluorophore causing the specific quenching of the fluorescence from the fluorophore, measuring the intensity of the observed fluorescent emission from the mixture, relating the observed fluorescence from the mixture to that of an external reference, and ascribing a differential fluorescent signal, if any, between the two, the ascribed differential fluorescent signal of the sample being indicative of the final state of the fluorophore labeled substrate population after enzymatic reaction, and in turn an indicator of enzymatic activity.

15. The method of claim 14 wherein the enzyme whose activity is being assayed is a kinase.

16. The method of claim 14 wherein the enzyme whose activity is being assayed is a phosphatase.

17. The method of claim 15 wherein the paramagnetic metal ion is Fe (III) and the target group is a phosphoryl group.

18. The method of claim 16 wherein the paramagnetic metal ion is Fe (III) and the target group is a phosphoryl group.

19. The method of claim 14 wherein the substrate or endproduct contains a single fluorophore label which is the only dye entity attached thereto.

20. The method of claim 15 wherein the substrate or endproduct contains a single fluorophore label which is the only dye entity attached thereto.

21. The method of claim 16 wherein the substrate or endproduct contains a single fluorophore label which is the only dye entity attached thereto.

22. The method of claim 14 wherein the paramagnetic metal ion, in addition to being bound to be the target group, is coordinated with a chelator.

23. A kit comprising a paramagnetic metal ion and an instruction booklet referencing and/or describing the manner in which the assay can be accomplished with respect to one or more enzymes as set forth herein.

24. The kit of claim 23, further including a synthetic calibrator.